Available online at www.sciencedirect.com
ScienceDirect
Addictive Behaviors 32 (2007) 1367–1383
ADDICTIVE BEHAVIORS

Explicit and implicit alcohol-related cognitions and the prediction of future drinking in adolescents

Carolien Thush [a,*], Reinout W. Wiers [a,b,c]

[a] *Experimental Psychology, Maastricht University, Maastricht, The Netherlands*
[b] *Radboud University, Nijmegen, The Netherlands*
[c] *IVO Addiction Research Institute, Rotterdam, The Netherlands*

Abstract

Both implicit and explicit alcohol-related cognitions might play a role in the early development of addictive behaviors. In this study, the association between both current and prospective alcohol use and implicit and explicit alcohol-related cognitions were measured in two different adolescent age groups ($N=100$; 51 twelve year olds, 49 fifteen year olds). Alcohol-related cognitions were measured on two dimensions (valence and arousal). A new measure, the unipolar Single Target Implicit Association Test (ST-IAT), was used as the implicit measure. A unipolar expectancy questionnaire was used as the explicit measure. Current alcohol use and alcohol use after one year were measured with an alcohol use questionnaire. Abstainers and drinkers differed in both their explicit and implicit alcohol-related cognitions moderated by age and gender. Additionally, a hierarchical regression analysis showed that implicit associations with alcohol added significantly to the prediction of prospective binge drinking, when controlling for grade, gender and explicit alcohol expectancies These results indicate the importance of taking implicit alcohol-related cognitions into account when intervention methods are developed.

Keywords: Implicit cognition; Explicit cognition; Adolescence; Alcohol use; IAT

1. Introduction

Alcohol-related cognition has been proposed to play an important role in the development and maintenance of addictive behaviors. Explicit alcohol outcome expectancies have shown to be strongly

* Corresponding author. Experimental Psychology, University of Maastricht, PO BOX 616, 6200 MD Maastricht, The Netherlands. Tel.: +31 43 388 1927x1908; fax: +31 43 388 4196.
E-mail address: c.thush@psychology.unimaas.nl (C. Thush).

0306-4603/$ - see front matter © 2006 Elsevier Ltd. All rights reserved.
doi:10.1016/j.addbeh.2006.09.011

correlated with current alcohol use, predicting up to half of the variance in concurrent alcohol use in cross-sectional studies (Goldman, Del Boca, & Darkes, 1999; Wiers, Hoogeveen, Sergeant, & Gunning, 1997). Explicit alcohol outcome expectancies have also been shown to be predictive of prospective alcohol use (e.g. Goldman & Darkes, 2004; Stacy, 1997; Stacy, Newcomb, & Bentler, 1991), however it must be noted that the proportion of explained variance is much smaller than in studies that examined concurrent alcohol use (see Jones, Corbin, & Fromme, 2001). Although explicit alcohol expectancies have been proven successful in predicting future alcohol use and abuse, their assessment has been criticized on a number of methodological and conceptual grounds (Leigh, 1989). Measuring explicit alcohol expectancies requires participants to rely on introspection; however, the question remains whether participants are willing and able to articulate the underlying motivational processes of their behavior (Stacy, 1997; Wiers, van Woerden, Smulders, & De Jong, 2002; cf. Nisbett & Wilson, 1977). Consequently, several authors proposed the use of implicit or indirect measures (Stacy, 1997; cf. Greenwald & Banaji, 1995). These implicit measures do not rely on introspective awareness of ones reasons for engaging in certain behavior and are supposed to tap into more automatic underlying motivational processes (Greenwald & Banaji, 1995; Greenwald, McGhee, & Schwartz, 1998).

Recently, there has been a growing interest into the role of implicit cognitions in the development of addictive behaviors. Implicit cognitions are traces of past experience that mediate behavior in a relatively automatic fashion, whereas explicit cognitions are introspectively accessible cognitions related to more slow deliberate choices (Greenwald & Banaji, 1995; Strack & Deutsch, 2004). It is likely that both explicit and implicit alcohol-related cognitions play an important role in the development of addictive behavior, since both implicit and explicit alcohol-related cognitions have been shown to predict a unique part of the variance in current and prospective alcohol use (e.g. Jajodia & Earleywine, 2003; Stacy, 1997; Wiers et al., 2002). Moreover, implicit and explicit attitudes could originate from different sources. Implicit attitudes may be related to early and affective experiences, whereas explicit attitudes may be based more on recent events (Rudman, 2004).

Until now, research has mainly focused on the development of explicit alcohol cognitions in the early stages of alcohol consumption. It has been proposed that children may have a ‘critical period’ around the age of 10 in the process of developing outcome expectancies towards alcohol. Around this age, children’s expectancies towards alcohol have been shown to shift from primarily negative to a primarily positive point of view (Dunn & Goldman, 1996, 1998, 2000). This bipolar shift in alcohol expectancies seems to mark the beginning of the initiation of alcohol consumption (Wiers, Gunning, & Sergeant, 1998). Later research indicated that positive and negative expectancies may develop in a more parallel fashion (Cameron, Stritzke, & Durkin, 2003). Children seem to hold both positive and negative alcohol expectancies simultaneously. When children are young, they primarily report negative alcohol expectancies although they already hold positive alcohol expectancies as well. When children grow older, they report more positive alcohol expectancies next to the negative alcohol expectancies they already had. In other words, children seem to become more ambivalent towards alcohol because of a relative increase in the activation of positive expectancies, which resulted in a balance between the activation of positive and negative expectancies (Cameron et al., 2003).

So far only few scientific attempts have been made at investigating the development of implicit alcohol-related cognitions in the early stages of alcohol consumption. However, we do know more about implicit alcohol-related cognitions once drinking alcohol has become common practice. Using an implicit memory task, implicit alcohol-related cognition uniquely predicts prospective alcohol use in high risk adolescents next to previous alcohol use, explicit cognitions and impulsive sensation seeking (Stacy,